Psychology 13: Cognitive Psychology

What, when, & where

Course #s: Psychology 13, Cognitive psychology
Exam group: 6, 7
When: Fall 2006, Mondays and Wednesdays, 1-2:30pm
Section: 1-hr lab (Friday noon-1pm; if you can’t make it: Mon noon-1pm).
Where: William James Hall Room 1 (basement lecture hall)

Instructor Info

Professor: Yuhong Jiang (Assistant professor, Dept of Psychology)
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Office hours: Immediately after most classes, or by appointment
Course Web: http://www.courses.fas.harvard.edu/colgsas/8706

Teaching fellows
Nathan Winkler-Rhoades psy13.harvard@gmail.com
Office hour: TBA, WJH 11th floor

Course Description

Welcome! This course will provide you with an overview of the theoretical and empirical approaches which constitute cognitive psychology. Cognitive psychologists explore the nature of cognitive processes such as attention, memory, concept and categorization, reasoning, perception, and language processing. Our goal is to understand (1) the representations and processes in our minds that underwrite these capabilities, and (2) how they are implemented in the underlying hardware – the brain. Stated more simply, our goal is to understand how the mind works, and how the brain works to produce such a mind. Trying to understand our own minds is one of the most ambitious and exciting projects in all of sciences. This course will introduce you to some of the major tools, assumptions, and theories from a cognitive and cognitive-neuroscience approach, and expose you to some of the more important results obtained thus far.

Expected work & grading

1. (70%) Three exams

Seventy percent of your course grade will be determined by three examinations. The first exam will be on Monday, October 30th, and will cover material from September 18th through October 25th. The second exam will be on Monday, December 4th, and will cover material from November 1st to November 29th. The third exam will be in January 2007, and will cover materials from the entire course. The first 2 exams each counts 15%, and the final exam 40%. The nature of the exams will be described more fully later. Make-up exams will be given only in exceptional circumstances.
circumstances, and in all cases will involve completely new questions, possibly in new formats. (Advice: You don’t want to have to take a makeup exam!).

2. (30%) Section attendance and Lab reports

Section attendance is mandatory (each attendance counts 1% of the grade for a total of 10%). There are two types of sections: discussion sections (5) and lab sections (5). Lab sections also include a written lab report (20%).

Lab reports: For five weeks we meet for labs. You will be divided in groups of 9, which will be further divided in subgroups of 3, to conduct some classical cognitive experiments. Each member of the subgroup will serve as the experimenter, the subject, and the observing person, in turns. Data from each group will be collected together for you to write an experimental report. The report will include: a brief introduction about the background of the experiment, method and procedure, results, and discussion. Each report should not be longer than 2000 words including tables and references. The report is due on Wednesday at 12:00 midnight, of the following week. Late submission will cost 1 letter grade per day. Lab report can be submitted as a paper copy or as an email attachment. 20% of the grade will be based on lab reports.

3. (3% extra credit) Psychology Department Subject Pool, or 3 short papers

We urge you to participate in 3 hours of experiments in the Departmental study pool during the semester. (Students who are required to participate in study pool experiments for other courses such as Abnormal or Social Psych need not duplicate their effort for Cognitive Psych. Your participation of 3 hrs or more experiments in other courses counts). Such experience helps you understanding of on-going experimental research in psychology. Each study you participate will earn 1% of your total course grade. However, participation in experiments is not required. Instead, you may choose to write three optional papers (each is equivalent to 1 study), which will be an “op-ed” style article (1000-1500 words) discussing how research in cognitive psychology can be applied to an issue or problem in an area such as public policy, the law, international relations, medicine, or business.

Textbook


Additional readings

Supplemental readings will be drawn from the scientific literature and will be added on the webpage periodically. Materials on cognitive neuroscience will be drawn from the literature. You may find the following book useful:


Both the Reisberg book and the GIM can be purchased at Harvard bookstore or from the web.
Preliminary Course Outline

Here’s a preliminary outline of the material that we’ll cover in this course. Note that we’ll start out with “central cognitive mechanisms” such as attention, memory, categorization, and reasoning, and then onto special domains such as vision and language. In addition, we will initially concentrate on the mind as inferred from behavior, and gradually shift to the mind as inferred from the brain. The exact timing of these lectures is very subject to change: We may end up spending more time than is listed here on topics that strike you as especially interesting or difficult. Overall, I encourage you to interact with me regarding this material: If there are any topics you would like to add, or to cover in more depth, let me know!

Week 1

Monday Sep 18  Introduction I: Cognitive Psychology.
Reading: Reisberg book Chapter 1

Wednesday Sep 20  Introduction II: themes

Friday Sep 22  Section: No meeting.

Week 2

Monday Sep 25  Attention I. Consequence of attention
Reading: Reisberg book Chapter 4.

Wednesday Sep 27  Attention II. Object-based attention

Friday Sep 29  Section: No meeting. Section sign-up today.

Week 3

Monday Oct 2  Attention III. Visual search

Wednesday Oct 4  Attention IV. Divided attention & Frontal lobe syndrome

Friday Oct 6  Section: Lab 1. Visual search (report due Oct 11 midnight)

Week 4

Monday Oct 9  Columbus Day, no class

Wednesday Oct 11  Memory I. Amnesia, memory types by time
Reading: Reisberg book, Chapter 5.

Tuesday Oct 13  Section: Discussion 1 – Multitasking

Week 5

Monday Oct 16  Memory II. Amnesia, memory types by content

Wednesday Oct 18  Memory III. Declarative memory: Encoding, retrieval, forgetting
Reading: Reisberg book, Chapters 6, 7, & 8
Friday Oct 20 Section: Lab Section 2 – Serial Position Curve (report due Oct 25 midnight)

Week 6
Monday Oct 23 Memory IV. Memory as reconstruction
Wednesday Oct 25 Emotion and Cognition
Reading: Our bodies, our fears (Feb 24, 2004, Newsweek)
Friday Oct 27 Section: Discussion Section 2 – False memory; Review for Exam

Week 7
Monday Oct 30 Exam 1.
Wednesday Nov 1 Knowledge I. Concept and categorization
Reading: Reisberg Chapter 9
Friday Nov 3 Section: Lab 3. Number (report due 11/8 midnight)

Week 8
Monday Nov 6 Knowledge II. Number concept
Wednesday Nov 8 Knowledge III. Reasoning and decision-making
Reading: Reisberg Chapters 12, 13, 14
Friday Nov 10 Section: No meeting. Veteran’s day.

Week 9
Monday Nov 13 Knowledge IV. Theory of Mind
Wednesday Nov 15 Vision I. Introduction – vision as reconstruction
Reading: Reisberg Chapter 3
Friday Nov 17 Section: Lab 4. Face perception (report due 11/26 midnight)

Week 10
Monday Nov 20 Vision II. Perception of faces and scenes
Reading: The Times (7/18/2006): Just another face in the crowd.
Wednesday Nov 22 No class. Class combined with next discussion section.
Friday Nov 24 Section: No meeting. Happy Thanksgiving.

Week 11
Monday Nov 27 Vision III. What, where, and how
Current Opinion in Neurobiology, 14(2), 203-211.
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Wednesday  Nov 29  Research Method
  Reading: Reisberg book, Chapter 2;

Friday  Nov 31  Section: Discussion Section 4 – imagery; Review for Exam 2.

Week 12

Monday  Dec 4  Exam 2.

Wednesday  Dec 6  Language I. Language acquisition
  Reading: Reisberg book, Chapter 10

Friday  Dec 8  Discussion Section 5 – Learning a second language.

Week 13

Monday  Dec 11  Language II. Language and the brain

Wednesday  Dec 13  Language III. Language and thought

Friday  Dec 15  Section: Lab 5, comprehension in context (Report due 12/20)

Week 14

Monday  Dec 18  Finale: Consciousness & wrap-up
  Reading: Reisberg book, Chapter 15
  Have a good break!

There will be no classes during reading period. A final exam review section will be arranged.

Policies

Make-up exam policy: Makeup exams will be given only with the Dean’s excuse. A student’s petition to the instructor or a student’s petition to the Dean is insufficient. Only with Dean’s permission will a makeup exam be arranged. Makeup exams have different questions than regular exams and will contain essay questions only. They will be slightly more difficult than regular exams.

Bad-question policy: In cases when an exam question receive a correct answer from less than 10% of students, the question will be discarded. The rest of the questions will be rescaled to make up for the loss.

Score dispute policy: If you have dispute about grading on an exam or homework, do not argue with the TFs. Talk to Prof. Jiang. Your entire exam or homework will be re-graded, including the questions/parts where you do not have disputes. The corrected score could be lower than the original score you received, because you might lose points on some questions and gain points on others.
Materials responsible: Reisberg textbook and lecture materials. The latter is the primary basis for exam questions.

Section grading and late policy: Each lab report will be graded on a 10-point scale. Lab report turned in after the deadline (midnight on Sundays unless specified otherwise) will receive no more than 6 points, and each late day gives you one more point to deduct (from a perfect score of 6). Complete lab report will receive at least 5 points. A perfect 10 is reserved for a perfect lab report only.

Communication policy: Students are encouraged to discuss among themselves the results and interpretation of the results in lab sections. Once the section is dismissed, students should not discuss the lab results. Students must independently work on the lab reports. You may consult with the TFs or the professor, but not with other students. Do not copy from another students’ lab report word-by-word, and do not paraphrase another student’s lab report.

Attendance: Section attendance is mandatory because the materials covered in sections cannot be gathered elsewhere. The TF will not run extra sections just because you missed the regular ones. Make-up section attendance will be granted only with the dean’s excuse. You should come to lectures even if you are late sometimes. Exams will be based on lecture materials, which can depart significantly from the Reisberg textbook.

Other information

Detailed info about Lab report: Lab report should include: (1) a brief introduction, including background information and the purpose of the study; (2) method: this section should be detailed enough for someone else to be able to set up an experiment and replicate your study based on what you described; (3) results: You should report the average across subjects, in each experimental condition, as well as a graph or table listing data from individual subjects. You should describe your results in common English, and back up your statement by data. For example, you might say “Accuracy in condition 1 is higher than in condition 2, Mean for condition 1 is 95%, mean for condition 2 is 60%. Most subjects (8 of 9) showed such an effect. Table 1 lists each subject’s score as well as the average of the entire group.” (4) Discussion: discuss the significant conclusion from the study, and any other relevant points. The entire report should not exceed 2000 words.